REMARKS

The present invention is a portable device; a method of controlling a handportable device including a display and an illuminator for illuminating a display; a display module for an electronic device; a display module; and a display module for an electronic device. The present invention provides an improved backlighting in portable devices by providing illumination of a display of an electronic device which is dependent upon a detected sum of the light received from an illuminator and light incident on the display or ambient light. A portable device in accordance with an embodiment of the invention includes a display 14; a light detector 91 for detecting light incident on at least part of the display; a comparator 94 for detecting the light detected with a given threshold; and a controller 23 controlling an illuminator D1-Dn and 98.

Claims 1-5, 13-16 and 20 stand rejected under 35 USC §102 as being anticipated by United States Patent No. 5,337,073 (Tsunoda et al.). Regarding independent claims 1, 14, 15, 16 and 20, the Examiner reasons as follows:

> "Regarding claims 1, 14, 15, 16 and 20, Tsunoda a portable device, method, display module and display (column 1, lines 9-14; figure 6) comprising: a display (column 1, line 10; figure 6, item 24); a light detector for detecting the light incident on at least part of the display (column 1, lines 46-51; figure 6, item 82) a comparator for comparing the light detected with a given threshold (column 7, lines 22-30); and control means a controller controlling an illuminator of illuminating the display in dependence upon the output of the comparator (column 8, lines 6-21; figure 6, item 80), where the light detector is positioned to receive a light level that represents the total light contributing to display illumination which is the sum of the light received from the illuminator and the light incident on the display (column 7, lines 25-30, e.g., circuit 82 and EL lamp 26 corresponding to light incident to the display and light from the illuminator)."

These grounds of rejection are traversed for the following reasons.

The Examiner erroneously reasons that Tsunoda teaches a light level which represents the total light contributing to display illumination which is the sum of the light received from the illuminator and light incident on the display. Independent claim 1, in part recites "wherein the light detector is positioned to receive a light level that represents the total light contributing to display illumination which is the sum of the light received from the illuminator and the light incident on the display"; independent claim 14, in part recites "detecting a light level that represents the total light contributing to display illumination, which is the sum of the light received from the illuminator in the ambient light incident on at least part of the display"; independent claim 15, recites in part "a light detector being positioned adjacent the reverse face of the display panel to detect light, which light is the sum of incident light incident on at least part of the display and the light from the illuminator; independent claim 16, recites in part "the light detector is positioned to receive a light level that represents the total light contributing to illumination of the display which is the sum of the light received from the illuminator and the ambient light incident on the display"; and independent claim 20, in part recites "a light detector for detecting light incident on at least part of the display panel, the light detector being positioned adjacent to the reverse space of the display panel to detect light incident on the device, which light is the ambient light and the light from the illuminator" (emphasis added). It is therefore seen that each of the independent claims recites a sum of light from the illuminator and light incident on the display or ambient light.

The circuit 82 of Tsunoda et al. operates to utilize the electroluminescent lamp 26 as both a detector and as an illuminator. See col. 3, lines 52-68 through

col. 4, lines 1-8 and col. 5, lines 29-43. What occurs is that when the control circuit 80 determines that the ambient illumination is too low to see the display 24, switch 86 switches the light emitting circuit 84 to drive the electroluminescent lamp 26 which was previously used as a sensor. It is therefore seen that each of the independent claims is not anticipated for the reason that the claims recite the light detector receiving a sum of light received from the illuminator and light incident on the display or ambient light while in Tsunoda et al. the electroluminescent lamp 26 (1) senses the ambient light when the illumination sense circuit 82 is operational when the switch 86 is connected in the position illustrated in Fig. 6 and (2) when the control circuit 80 senses that the light level is too low and light emitting circuit 84 is switched into operation, the electroluminescent lamp 26 is driven to produce back lighting. Accordingly, none of the independent claims are anticipated for the reason that the sum of the light received from the illuminator and light incident on the display or ambient light is not utilized as the control parameter in Tsunoda et al. as recited in each of the independent claims.

Dependent claims 2-5 and 13 further limit independent claim 1 in a manner which is not anticipated by Tsunoda et al. for the reasons set forth above.

Moreover, claim 2 further limits claim 1 in reciting the light detector is located behind the display, remote from the surface of the display onto which the ambient light is incident. The Examiner relies upon col. 1, lines 47-51 which state "[i]t is therefore an object at the present invention to provide portable radio equipment which directly senses light incident to a display itself and thereby senses the

illumination on the display with accuracy to surely back-light the display". This does not teach the limitation of the claim 2.

Claim 4 limits claim 1 in reciting the controller enables the illuminator in response to an indication by the comparator that the light level is less than a second threshold. The Examiner has construed the first threshold as being the control for disabling the illuminator as recited in claim 3. It is submitted that with the construction of claim 3 regarding the first threshold, there is no teaching of the second threshold. Lines 36-41 of col. 7 and lines 6-9 of col. 8, discuss a single threshold and it is submitted that this disclosure does not correspond to the claimed second threshold.

Claim 5 further limits claim 3 in reciting the controller enables the illuminator in response to an indication by the comparator that the light detectors is less than a second threshold. It is submitted for the reasons set forth above that Tsunoda et al. does not disclose the first and second thresholds in col. 7, lines 41-47 and col. 8, lines 9-15 since therein only a single threshold level is being discussed with there being no teaching of the multiple thresholds. Claim 13 is patentable for the same reasons set forth above with respect to claim 1.

Claims 6 and 7 stand rejected under 35 USC §103 as being unpatentable over Tsunoda et al. in view of U.S. Patent No. 6,078,302 (Suzuki et al.). These grounds of rejection are traversed for the following reasons.

Claim 6 further limits claim 5 in reciting the controller partially enables the illuminator in response to an indication by the comparator that the light detected is between the first and second thresholds. Suzuki et al. do not cure the deficiencies

noted above with respect to Tsunoda et al. Suzuki et al. teach a light sensor which relies solely on ambient light. See col. 3, lines 19-44 wherein detection of ambient light utilized for use by an optimal brightness calculator 104 is discussed. In Suzuki et al. a screen illuminating panel 102 is driven to hold optimal brightness. A photosensor 103 detects the ambient light which is utilized by the optimal brightness calculator 104 for driving of the backlighting panel 102. Accordingly, a person of ordinary skill in the art would not be lead to modify the teachings of Tsunoda et al. with Suzuki et al. to arrive at the claimed subject matter, since the claimed sum of the light received from the illuminator and the light incident on the display or ambient light would not be achieved since neither reference teaches this subject matter. Accordingly, the subject matter of claim 6 is not obvious.

Claim 7 further limits claim 1 in reciting "means for determining a change in output of a light detector over a predetermined period, wherein the control means is arranged to disable functionality relating to the display in response to an indication that no change is determined." As stated above, Suzuki et al. did not cure the deficiencies noted above with respect to the independent claims including claim 1.

Claims 8 and 9 stand rejected under 35 USC §103 as being unpatentable over Tsunoda et al. in view of Suzuki et al. in view of U.S. Publication 2001/0024967 (Bauer). Bauer has been cited as teaching disabling the display in response to an indication that no change is determined with the Examiner relying upon paragraph [0014]. However, this teaching does not cure the deficiencies noted above with respect to Tsunoda et al. and Suzuki et al.

Claims 10-12 stand rejected under 35 USC §103 as being unpatentable over Tsunoda et al. in view Bauer. This ground of rejection is traversed for the following reasons.

The Examiner relies upon paragraph [0006] of Bauer which is cited for teaching input means. However, the input means of Bauer do not cure the deficiencies noted above with respect to Tsunoda et al.

In view of the foregoing amendments and remarks, it is submitted that each of the claims in the application is in condition for allowance. Accordingly, early allowance thereof is respectfully requested.

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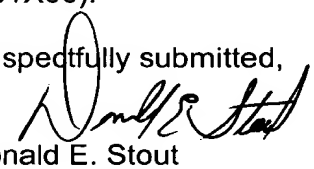
Respectfully submitted,



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